

RESEARCH PROJECT SEGMENT

State: Alaska

Project No.: F-9-3

Name: Sport Fish Investigations of Alaska.

Study No.: G-IV

Study Title: Creel Census Studies.

Job No.: G-IV-B

Job Title: Creel Census of the Sport Fish and Sport Fish Waters of the Cook Inlet Drainage.

Period Covered: July 1, 1970 to June 30, 1971.

ABSTRACT

From July 20 to August 28, 1970, a survey was conducted on nine streams in the Willow-Talkeetna area to determine angling effort and expenditures. Anglers were fishing primarily for pink salmon, Oncorhynchus gorbuscha, and silver salmon, O. kisutch.

A survey form was designed to obtain information on angling effort and daily expenditures.

A total of 399 parties (1,557 anglers) were interviewed. Eleven hundred thirty-two (72.7%) of the 1,557 anglers were Alaska residents and 425 (27.3%) were nonresidents. Of the 1,132 residents interviewed, 1,086 (95.9%) lived in the Greater Anchorage Area Borough. Eight hundred nineteen (52.6%) of the 1,557 anglers interviewed were military, and 738 (47.4%) were civilian.

An estimated 5,580 cars (21,482 anglers) were on the nine streams during the 40-day survey period, with an estimated average of 3.85 persons per car.

A minimum of \$24.24 per trip, or \$12.30 per day, was spent by each party that was in the survey area.

A minimum of \$101,946 was spent in the Greater Anchorage Area Borough and \$33,313 was spent in the Matanuska-Susitna Borough.

SPORT FISHERY SURVEY
EAST SIDE SUSITNA TRIBUTARIES

LOCATION (STREAM) _____ DATE _____

NUMBER IN PARTY: ADULTS _____ MINORS _____

RESIDENT _____ NON-RESIDENT _____

HOME TOWN _____ LIVING IN ALASKA--YES _____ NO _____

MILITARY _____ CIVILIAN _____ MILITARY _____ CIVILIAN _____

TYPE OF VEHICLE: _____ CAR _____ PICKUP CAMPER _____ OTHER _____

NUMBER OF DAYS THIS TRIP _____

TYPE OF LODGING IF OVERNIGHTING _____

TOTAL EXPENDITURES	(THIS DAY)	(THIS TRIP)	MAT-SU BOROUGH	ANCHORAGE BOROUGH
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MONEY SPENT ON		GASOLINE _____		
		FOOD _____		
		FISHING TACKLE _____		
		OTHER _____		

ANTICIPATED EXPENDITURES	(THIS DAY)	(THIS TRIP)		
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MONEY TO BE SPENT ON		GASOLINE _____		
		FOOD _____		
		FISHING TACKLE _____		
		OTHER _____		

NOTE: CENSUS TAKER TO DENOTE WHETHER FINANCIAL EXPENDITURES REFER TO SINGLE SAMPLE DAY OR ENTIRE TRIP

COMMENTS: _____

FIGURE 1 ECONOMIC SURVEY INTERVIEW FORM

RECOMMENDATIONS

1. Continue the economic survey during an odd-numbered year to determine daily expenditures and angler effort on anadromous fish streams.
2. Collect population data from sport-caught king salmon on Willow Creek and the Little Susitna River.
3. Determine the recreational king salmon catch during the king salmon punch-card fishery on Willow Creek and the Little Susitna River.

All future creel census work conducted on anadromous fish streams in the Matanuska-Susitna Valleys shall be included under a new anadromous fish population study commencing in the summer, 1971.

OBJECTIVES

To determine angling effort, sport fish harvests, and population trends in the recreational waters adjacent to the highway system of the area.

TECHNIQUES USED

An interview form was developed to collect information on angling effort and expenditures (Figure 1).

A sampling plan was designed to compile effort and expenditure estimates. Weekend days and two randomly selected weekdays were sampled each week. Thirty to 40 parties were interviewed on weekend days and 10 parties were interviewed during weekdays. All interviews were conducted at Willow Creek.

Car counts were made to obtain an estimate of the number of anglers on anadromous fish streams in the study area. On each sampling day, car counts were made during midday on all nine streams in the study area. When the study was initiated, it was now known what percentage of the total number of cars on a stream throughout the day was represented by a single car count taken at midday. To determine this percentage, license numbers of all cars along Willow Creek were recorded three times each Saturday and Sunday. When the turnover rate was determined, weekend car counts were extrapolated by that percentage. Since the turnover rate on weekdays was not determined, weekday use figures were not extrapolated. Car counts made on the two weekdays were averaged for each week, and the resulting average was used to estimate use during the remaining three weekdays.

The average number of people per car was determined from information collected on the interview forms. The total number of anglers was determined by multiplying the average number of people per car times the total estimated number of cars on each stream.

All parties interviewed were asked the dollar expenditure of various items purchased during their trip. They were also asked where they purchased each item during their trip to the Willow-Talkeetna area. To determine expenditures, all monetary figures collected on the interview forms were totalled. The total amount spent by all parties interviewed was divided by the number of parties interviewed to determine how much each party spent per trip. Average expenditures per party per day were determined by dividing the amount spent per trip by the average number of days spent per trip. The total amount spent by all parties during the survey period was determined by multiplying the amount spent per trip times the total estimated number of parties.

FINDINGS

The study area is located on the new Anchorage-Fairbanks Highway, between Willow and Talkeetna. The survey was conducted from July 20 to August 28, 1970, on nine east side tributaries of the Susitna River. The locations of these streams are shown in Figure 2.

The streams contain some rainbow trout, Salmo gairdneri, and grayling, Thymallus arcticus, and all are believed to contain at least limited numbers of king salmon, Oncorhynchus tshawytscha, silver salmon, O. kisutch, chum salmon, O. keta; and on even-numbered years, large numbers of pink salmon, O. gorbuscha. All streams are presently closed to king salmon fishing. A limited king salmon fishery will occur on Willow Creek and the Little Susitna River starting in the spring, 1971.

During several weekends when fishing was mediocre, it was not possible to obtain 40 party interviews. Ten party interviews were not difficult to obtain during weekdays.

During the survey period, a total of 399 parties were interviewed. The 399 parties were comprised of 1,557 anglers, including both adults and minors. Questions asked during interviews enabled us to determine the following information:

1. The number of military and civilian anglers, resident and nonresident (Table 1).
2. The number of adult and minor anglers, resident and nonresident (Table 2).
3. The type of vehicle utilized by each party traveling to the Willow-Talkeetna area (Table 3).

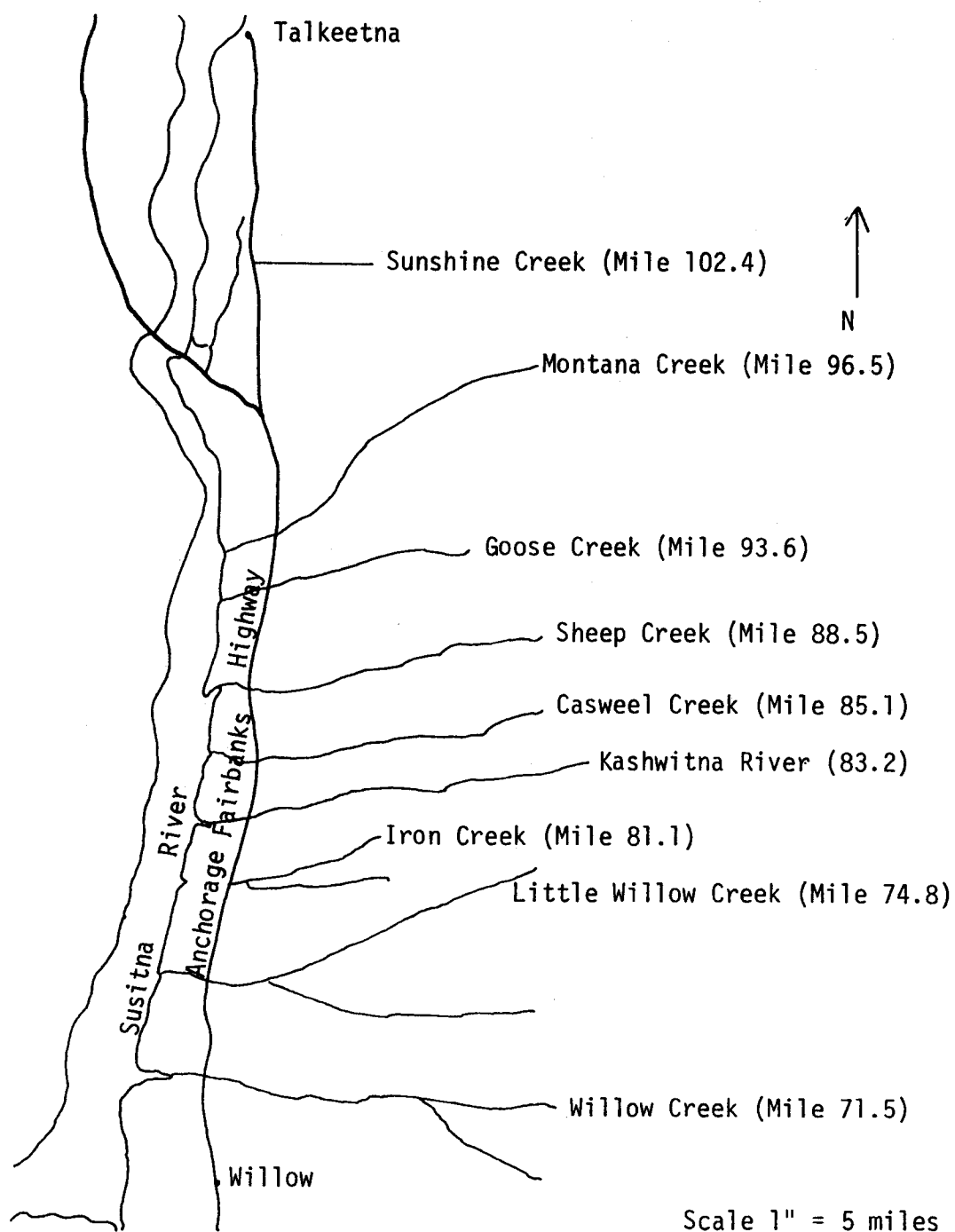


FIGURE 2 MAP OF THE WILLOW-TALKEETNA AREA SHOWING THE LOCATIONS OF THE STREAMS INCLUDED IN THE CENSUS AREA

4. The number of days spent per trip to the Willow-Talkeetna area (Table 4).
5. The type of lodging utilized by those anglers remaining overnight in the Willow-Talkeetna area (Table 5).

Figures presented in Tables 1 and 2 show that 1,132 (72.7%) of the anglers interviewed were Alaska residents, of which 617 (54.5%) were military and 515 (45.5%) were civilian. Military personnel and dependents represented 52.6% (819) of the total number of people interviewed, while civilians represented 47.4% (738) of the total.

TABLE 1 Number of Military and Civilian Anglers, Resident and Nonresident, Interviewed on Willow Creek, July 20 - August 28, 1970.

	<u>Resident</u>		<u>Nonresident</u>		<u>Total</u>	
Military	617	(54.5%)	202	(47.5%)	819	(52.6%)
Civilian	<u>515</u>	(45.5%)	<u>223</u>	(52.5%)	<u>738</u>	(47.4%)
Total	1,132	(72.7%)	425	(27.3%)	1,557	

To estimate the number of tourists using the area, all nonresidents were asked if they were living in Alaska. Of the 425 nonresidents contacted, 282 (66.4%) were living in Alaska, and 143 (33.6%) were not. The 143 nonresidents not living in Alaska were considered to be tourists. This means that only 9.2% of the total number of anglers interviewed on Willow Creek were tourists.

TABLE 2 Number of Adult and Minor Anglers, Resident and Nonresident, Interviewed on Willow Creek, July 20 - August 28, 1970.

	<u>Resident</u>		<u>Nonresident</u>		<u>Total</u>	
Adult	634	(56.0%)	291	(68.5%)	925	(59.4%)
Minor	<u>498</u>	(44.0%)	<u>134</u>	(31.5%)	<u>632</u>	(40.6%)
Total	1,132	(72.7%)	425	(27.3%)	1,557	

All residents were asked where they were living at the present time. Of the 1,132 residents interviewed, 1,047 (92.5%) gave Anchorage as their place of residence, and 39 (3.4%) were from the Eagle River area. The other 46 (4.1%) residents were from other areas in Alaska.

TABLE 3 Types and Numbers of Vehicles Utilized by Interviewed Parties on Willow Creek, July 20 - August 28, 1970.

<u>Type of Vehicle</u>	<u>No.</u>	<u>%</u>
Car	253	62.6
Pickup camper	123	30.5
Jeep	13	3.2
Travel home	10	2.5
Truck	<u>5</u>	1.2
Total	404*	

*Several parties came in more than one car and were counted as only one party.

TABLE 4 Number of Days Spent on Each Trip to Willow Creek, July 20 - August 28, 1970.

<u>No. Days</u>	<u>No. Parties</u>	<u>%</u>
1	178	44.6
2	128	32.1
3	59	14.8
4 (or more)	<u>34</u>	8.5
Total	399	

TABLE 5 Type of Lodging Utilized by Parties Remaining Overnight at Willow Creek, July 20 - August 28, 1970.

<u>Type of Lodging</u>	<u>No. Parties</u>	<u>%</u>
Pickup camper	99	44.8
Camper trailer	79	35.7
Tent	26	11.8
Car	7	3.2
Travel home	5	2.3
Cabin	3	1.3
Hotel	2	0.9

Total Effort

The turnover rate of cars on Willow Creek throughout a day was high. The largest number of cars were at the stream during the midday count. The midday count represented approximately 50% of the total number of cars present during the entire day. Using this figure, all weekend car counts obtained on all other streams were doubled. Since the turnover rate was determined for weekends only, it could not be used to extrapolate car counts made during weekdays. Car counts obtained on weekdays are minimum counts because the turnover rate was not determined for weekdays.

Car counts for each of the nine streams were totalled for the 40-day survey period. By dividing the total number of persons interviewed (1,557) by the number of vehicles the interviewed people traveled in (404), an average of 3.85 people per car was obtained. The total number of anglers on each stream was calculated by multiplying car counts by 3.85. The majority of effort was expended on Willow and Montana Creeks. The estimated number of cars and anglers on each stream during the survey period are shown in Table 6.

TABLE 6 Estimated Number of Cars and Anglers on Each Stream in the Study Area, July 20 - August 28, 1970.

<u>Stream</u>	<u>No. Cars</u>	<u>No. Anglers</u>
Willow Creek	2,237	8,612
Montana Creek	1,605	6,179
Sheep Creek	541	2,083
Sunshine Creek	385	1,482
Caswell Creek	291	1,120
Little Willow Creek	283	1,090
Kashwitna River	124	477
Iron Creek	70	270
Goose Creek	44	169
Total	5,580	21,482

Fishing effort is often influenced by water conditions, weather conditions, availability of fish, public access, and recreational facilities available in the area. Rainy conditions during the survey period created high, turbid water conditions in all streams in the study area. These conditions made the streams unfishable at times, and resulted in reduced effort. The typically large runs of pink salmon entering these streams during even-numbered years did not develop, and this further reduced angling effort. When fishing was good the number of anglers on Willow and Montana creeks was limited by the lack of public access and parking space.

Expenditures

On the interview form (Figure 1) there is a section for anticipated expenditures. People were hesitant to give estimates on anticipated expenditures; therefore, this section of the interview form was deleted, and no figures were calculated.

The 399 parties interviewed spent an average of 1.97 days per trip. Each party spent an estimated average of \$12.30 per day, or \$24.24 per each trip to the Willow-Talkeetna area. Expenditures are broken down into four categories in Tables 7 and 8.

TABLE 7 Expenditures Per Day Made by Each Party in the Matanuska-Susitna Borough and Greater Anchorage Area Borough during the Survey Period, July 20 - August 28, 1970.

Item	Expenditures/Day					
	Mat-Su Borough	%	Anchorage Borough	%	Tot.	%
Gasoline	\$1.23	40.6	\$2.88	31.1	\$ 4.11	33.4
Food	1.02	33.7	4.62	49.8	5.64	45.8
Fishing tackle	.42	13.8	1.58	17.0	2.00	16.3
Miscellaneous	.36	11.9	.19	2.1	.55	4.5
Total	\$3.03		\$9.27		\$12.30	

TABLE 8 Expenditures Per Trip Made by Each Party in the Matanuska-Susitna Borough and Greater Anchorage Area Borough during the Survey Period, July 20 - August 28, 1970.

Item	Expenditures/Trip					
	Mat-Su Borough	%	Anchorage Borough	%	Tot.	%
Gasoline	\$2.24	40.5	\$ 5.67	31.0	\$ 8.09	33.4
Food	2.01	33.7	9.10	49.8	11.11	45.8
Fishing tackle	.83	13.9	3.12	17.1	3.95	16.3
Miscellaneous	.71	11.9	.38	2.1	1.09	4.5
Total	\$5.97		\$18.27		\$24.24	

An estimated 5,580 parties were on the nine streams (Table 6); therefore it was possible to calculate the total amount spent on specific goods and services purchased by all parties. The results of these calculations are presented in Table 9.

TABLE 9 Total Expenditures on Goods and Services Purchased by All Parties Traveling to the Willow-Talkeetna Area, July 20 - August 28, 1970.

<u>Item</u>	<u>Mat-Su Borough</u>	<u>Anchorage Borough</u>	<u>Tot.</u>
Gasoline	\$13,504	\$ 31,638	\$ 45,142
Food	11,216	50,778	61,994
Fishing tackle	4,631	17,410	22,041
Miscellaneous	<u>3,962</u>	<u>2,120</u>	<u>6,082</u>
Total	\$33,313	\$101,946	\$135,259

The largest expenditure in the Matanuska-Susitna Borough was made on gasoline (\$2.42 per trip), and \$2.01 was spent per trip on food. In the Greater Anchorage Area Borough, the largest expenditure was made on food (\$9.10 per trip) and \$5.67 was spent per trip on gasoline. People bought their food in the Anchorage area before departing on their trip. After traveling to the Willow-Talkeetna area, the largest expense was on gasoline.

The value of each of the nine streams in the study area was calculated by multiplying car counts times \$24.24. The results of these calculations are presented in Table 10.

TABLE 10 Total Expenditures Made by All Parties Traveling to the Willow-Talkeetna Area, July 20 - August 28, 1970.

	<u>Mat-Su Borough</u>	<u>Anchorage Borough</u>	<u>Tot.</u>	<u>%</u>
Willow Creek	\$13,355	\$ 40,870	\$ 54,225	40.1
Montana Creek	9,582	29,323	38,905	28.8
Sheep Creek	3,230	9,884	13,114	9.7
Sunshine Creek	2,298	7,034	9,332	6.9
Caswell Creek	1,737	5,317	7,054	5.2
Little Willow Creek	1,690	5,170	6,860	5.1
Kashwitna River	740	2,265	3,005	2.2
Iron Creek	418	1,279	1,697	1.2
Goose Creek	<u>263</u>	<u>804</u>	<u>1,067</u>	0.8
Total	\$33,313 (24.6%)	\$101,946 (75.4%)	\$135,259	

The majority of expenditures (\$101,946) were made in the Anchorage area as expected, since 95.9% of the persons interviewed were Greater Anchorage area residents. This means that the majority of the \$33,313 spent in the Matanuska-Susitna Borough was spent by Anchorage area residents and is a net infusion of new funds entering the Matanuska-Susitna Borough.

Of major importance is that no estimates could be obtained on anticipated expenditures. Many parties would have to purchase gasoline to return home or they possibly would stop to eat on their return trip home. All expenditures presented represent only the amount spent by a party up to the time they were interviewed. This means that all expenditure figures presented in Tables 7, 8, 9, and 10 are minimum figures and the actual amount spent by a party would be higher. Estimated expenditure figures do not include money spent on items purchased prior to the trip. Such items would include rods, reels, boots, camping equipment, and other miscellaneous items. Expenditure figures in Tables 7, 8, 9, and 10 represent only 40 days of the total season during the fall salmon runs. The figures do not include the value of the spring fishery for resident species such as rainbow trout and grayling. This fishery occurs primarily from May to July 15 and to a lesser degree during September.

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Date: April 30, 1971

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